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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,650	09/24/2003	Terry Joseph Hendricks	NREL01-17	6789

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EXAMINER

MCKINNON, TERRELL L

ART UNIT PAPER NUMBER

3743

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,650	HENDRICKS ET AL.	
	Examiner	Art Unit	
	Terrell L Mckinnon	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,21,22,24-28,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-19,21,22,24,25 and 28 is/are allowed.
- 6) ☒ Claim(s) 1-11, 26, 27, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of applicant's amendment filed December 13, 2004. Claims 20, 23 and 29 have been canceled without prejudice. Claims 1-19, 21, 22, 24-28 and 30-31 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 1-19, 21, 22, 24-28 and 30-31 have been considered but are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 26, 27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (JP 60-185654) in view of Liu (U.S. 5,950,710).

Tanaka invention discloses a passive cooling system comprising:

- a heat pipe within the component, the heat pipe communicating between the component and the external portion of the vehicle;
- the heat pipe containing a liquid, the heat pipe having an evaporator section at least partially mounted within the component in abutting contact with a surface of the component; and

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- the component is an instrument panel, wherein it is very obvious that that the instrument panel has an outer layer composed of thermoplastic polymer.

Tanaka's invention discloses all of the claimed limitations from above except for the passive cooling system comprising a plurality of heat pipes; the external portion comprises a side panel of the vehicle and wherein the condenser section is mounted to an interior surface of the side panel; the condenser section is mounted Lower within the vehicle than the evaporator section and wherein a Lowest portion of the condenser section is less than about 1 vertical foot from a lowest portion of the evaporator section; the thermoplastic polymer is polyvinylchloride; a thermally conductive film wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer of the instrument panel; the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer of the instrument panel; the thermally conductive film is a metal selected from the group listed in claim 8; the thermally conductive film is a ceramic material selected from claim 9; the thermally conductive film is a carbon based material selected from claim 10; a bracket for accepting the heat pipe wherein the bracket is attached to the thermally conductive film;

3. However, Liu teaches a passive cooling system comprising:

- the passive cooling system comprising a plurality of heat pipes (20);

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- the use of a thermoplastic polymer, wherein official notice is taken in regards to the various alternate thermally conductive films and heat pipe materials that are equivalents and well known in the art;
- a thermally conductive film (30) wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer;
- the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer;
- a bracket (42) for accepting the heat pipe wherein the bracket is attached to the thermally conductive film;
- the passive cooling system of claim wherein the external portion of the vehicle is a side body panel;
- the heat pipe is further defined as containing water suitable for transferring the solar heat absorbed in cabin portion to the external portion of the vehicle;

Given the teachings of Liu, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the passive cooling system of Tanaka the passive cooling system comprising a plurality of heat pipes; the external portion comprises a side panel of the vehicle and wherein the condenser section is mounted to an interior surface of the side panel; the condenser section is mounted lower within the vehicle than the evaporator section and wherein a lowest portion of the condenser section is less than about 1 vertical foot from a lowest portion of the evaporator section;

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the thermoplastic polymer is polyvinylchloride; a thermally conductive film wherein the evaporator section of the heat pipe is thermally connected to the thermally conductive film and the thermally conductive film is embedded in the thermoplastic layer of the instrument panel; the heat pipe is attached to the conductive film and the film is adhered to the thermoplastic layer of the instrument panel; the thermally conductive film is a metal selected from the group listed in claim 8; the thermally conductive film is a ceramic material selected from claim 9; the thermally conductive film is a carbon based material selected from claim 10; a bracket for accepting the heat pipe wherein the bracket is attached to the thermally conductive film; the passive cooling system of claim wherein the external portion of the vehicle is a side body panel; the heat pipe is further defined as comprising copper and as containing water suitable for transferring the solar heat absorbed at the instrument panel to the external portion of the vehicle.

Doing so would provide an efficient and reliable means of cooling the instrument panel and cabin area of a vehicle.

Allowable Subject Matter

4. Claims 12-19, 21, 22, 24, 25 and 28 are allowed.

Response to Arguments

Applicant's arguments filed December 13, 2004 have been fully considered but they are not persuasive.

Applicant's states, "Tanaka fails to show a heat pipe with an evaporator section

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mounted "within" a component or mounted "for conductive heat transfer."

Tanaka shows a heat pipe with an evaporator section mounted within a component or mounted for conductive heat transfer (Fig. 1).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Terrell L. McKinnon", is positioned above the printed name.

Terrell L McKinnon
Primary Examiner
Art Unit 3743
March 7, 2005